

**IN THE CLAIMS:**

1-10. (Canceled)

11. (Original) An isolated nucleic acid comprising a nucleotide sequence that:

- (a) encodes a polypeptide according to SEQ ID NO: 4; or
- (b) encodes a polypeptide encoded by the canine MC4R clone as deposited with the ATCC and having ATCC Accession No. PTA-1761.

12. (Previously presented) The isolated nucleic acid of Claim 11, wherein said nucleic acid comprises a nucleotide sequence according to SEQ ID NO: 2 or the canine MC4R clone as deposited with the ATCC and having ATCC Accession No. PTA-1761.

13-16. (Canceled)

17. (Currently amended) A nucleotide vector comprising the nucleic acid of Claim 11; or 12, 13, 14, 15, 16, 70 or 71.

18. (Currently amended) An expression vector comprising the nucleic acid of Claim 11; or 12, 13, 14, 15, 16, 70 or 71 in operative association with a nucleotide regulatory element that controls expression of the polypeptide encoded by said nucleotide sequence.

19. (Currently amended) A genetically engineered host cell comprising the nucleic acid of Claim 11; or 12, 13, 14, 15, 16, 70 or 71.

20. (Currently amended) A genetically engineered host cell comprising the nucleic acid of Claim 11; or 12, 13, 14, 15, 16, 70 or 71 wherein said nucleic acid is in operative association with a nucleotide regulatory element that controls expression of said nucleotide sequence in the host cell.

21-23. (Canceled)

24. (Original) A method for producing a recombinant polypeptide, comprising:

- (a) culturing a host cell transformed with the expression vector of Claim 18 and which expresses the recombinant polypeptide; and
- (b) recovering the recombinant polypeptide from the cell culture.

25-69. (Canceled)

70. (Currently amended) An isolated nucleic acid consisting of a nucleotide sequence encoding an extra-cellular domain of a canine MC4R corresponding to amino acids 1-46, 98-124, or 187-191, ~~or 268-279~~ of SEQ ID NO: 4 or of the polypeptide encoded by the canine MC4R clone as deposited with the ATCC and having ATCC Accession No. PTA-1761.

71. (Currently amended) An isolated nucleic acid consisting of a nucleotide sequence encoding a cytoplasmic domain of a canine MC4R corresponding to amino acids 69-77, 147-163, or 216-244, ~~or 302-333~~ of SEQ ID NO: 4 or of the polypeptide encoded by the canine MC4R clone as deposited with the ATCC and having ATCC Accession No. PTA-1761.